

REMARKS

Applicants respectfully request that the foregoing amendments, canceling original claims 1-9 and adding new claims 10-24, be entered in this application. Claims 10-24 remain in the application for examination, with claim 10 being the sole independent claim.

The rejection of claim 3 as being indefinite has been rendered moot by cancellation of that claim and presentation of new claims that are believed to fully comply with the requirements of 35 U.S.C. § 112.

Similarly, the rejection of original claims 1-9 under 35 U.S.C. § 103 based upon FR 27 80 153 ("FR '153") alone or, in the case of original claim 7, further in view of EP 10 74 807 ("EP '807") has also been rendered moot by the foregoing amendments. For reasons set forth below, Applicants respectfully submit that the newly presented claims are patentable over the cited prior art documents.

New independent claim 10 differentiates structurally and patentably over the design shown and described in FR '153 in the following respects. Claim 10 defines "an embossment in the opposing tube wall which is directed toward the inside of the tube and which forms a surface that is deformable in response to tolerance variations of the at least one web." (See disclosure, e.g., at page 2, lines 31 et seq. of the present application. The term "sprung" is a translation of the German term "federnd," which would be better translated as "resilient" or "springy.") The structure shown in FR '153 does not meet this definition and does not function in the same way as the claimed invention.

FR '153 shows a multi-chambered flat heat exchanger tube in which a V-shaped depression 32 is formed when the tube wall 12 is folded in and layers 20 and 22 are joined together to form the "web" that extends to the opposite side of the tube interior. A corresponding V-shaped indentation 34 is formed in the opposite tube wall 14. However, this indentation 34 has a basically triangular shape, which renders it non-deformable, and the indentation is placed in the tube of FR '153 for a completely different purpose than the embossment of the present invention. First, the purpose of providing two identical V-shaped indentations in opposing tube walls is to provide symmetry to the tube, i.e., so that assembly into the heat exchanger is

simplified due to the fact that it is not necessary to first orient each tube in the same orientation (i.e., with all of the single-grooved sides facing in the same direction). Obviously, this is avoided if the two sides are symmetrical. See pages 1 and 2 and claim 7 of FR '153. Since the objective is to have indentation 34 match the V-shape that is necessarily formed by the creation of indentation 32, it would clearly not be suggested to provide a different shape for indentation 34, i.e., clearly not a shape such as is used according to the present invention.

The further implication of the FR '153 specification is that the V-shaped indentation 34 is put into the tube of that reference as a kind of reinforcing structure, to maintain the integrity of the joint formed at the end of the web, i.e., to avoid a breach between the separate and parallel tube passageways 24 and 26. See page 4, line 37 through page 5, line 17 of FR '153. Again, such a purpose for the indentation 34 is antithetical to the purpose for which the embossment is provided according to the present invention, i.e., to provide a "deformable" structure to compensate for tolerance variations of the web.

Consequently, not only does the FR '153 reference not disclose the structure and purpose of the embossments claimed in the present application, but the cited reference actually teaches away from any structure other than the V-shaped indentation disclosed therein. The FR '153 reference cannot, therefore, render obvious the presently claimed invention.

Further, some of the dependent claims of the present application recite specific dimensions for the embossments according to the invention (e.g., claims 11, 12, 20 and 21), and it is evident that these recited dimensions are not taught and cannot be achieved according to FR '153, i.e., and still be consistent with the V-shaped profile that is required to match the V-shaped profile of seam 32.

Responsive to the comments made in the Office Action about such claims, the recited dimensions also have a purpose that is not suggested (and not achieved) by the structure shown in FR '153, namely, to avoid the production of a discontinuous solder junction between the tube and subsequently applied heat exchange fins.

Therefore, the PTO must give weight to the dimensions set forth in these claims, as

they clearly have an intended purpose that brings about advantages for the claimed product.


The EP '807 reference does not rectify the deficiencies that have been noted above with respect to the FR '153 reference. A combination of these two references does not provide a proper basis to support a *prima facie* case of obviousness of the claimed invention.

In view of these comments, it is respectfully submitted that newly presented independent claim 10 and all of claims 11-24 that depend therefrom define subject matter that is patentable over the cited prior art. Further and favorable action in the form of a Notice of Allowance of all claims is believed to be next in order, and such action is courteously solicited.

Should there be any minor matters that are need to be attended to in order to finalize the allowance of this application, Examiner Kim is invited to telephone the undersigned at the number shown below.

Respectfully submitted,

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By 

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